

City of Santa Fe Water Division



*Presented to the
Public Utility
Committee (PUC)
on 7 January 2004.
Criteria
amendments
requested by PUC
and approved by
City Council on 14
January 2004
have been
incorporated.*

Alternative Screening For Long-Range Water Supply Program

Project Update

January 2004

City of Santa Fe Water Division



Presented to the Public Utility Committee (PUC) on 7 January 2004. Criteria amendments requested by PUC and approved by City Council on 14 January 2004 have been incorporated.

**Alternative Screening For
Long-Range Water Supply Program
PUC Agenda Item ____**

January 2004

Agenda

- ✓ **Process**
- ✓ **Options Under Consideration**
- ✓ **Discussion of Screening Criteria**
- ✓ **Request Approval of Screening Criteria & Numeric Weights**

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Process

- ✓ **Build on & synthesize past studies**
 - City, Jemez y Sangre, LURC, & others
- ✓ **Coordinated effort**
 - Screening workshop with County held in Dec 02
 - City/County Regional Planning Authority Jan 03
 - Jemez y Sangre RPC Mar 03
 - Public Utilities Committee Oct 03
 - Jemez y Sangre RPC Oct 03
 - Inter-government & Pueblos Oct 03

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Long-Range Program

Process

- ✓ **Developed list of long-term options**
- ✓ **Conduct coarse screening analysis**
 - Refine list of options
 - Public input & agency input
 - PUC & Council input & approval
- ✓ **Engineering analysis of short list**
 - Public & governing body input
- ✓ **Environmental process (NEPA)**
- ✓ **Final design & implementation**

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General Categories of Options

✓ Water supply options

- Surface diversions
- Groundwater
- Reuse of reclaimed water

✓ Other Elements

- Conservation
- Water management & conjunctive use
- Maintenance of existing wells
- Regional initiatives

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Long-Term Options

Surface Diversions Rights

- ✓ **Purchase or lease water rights**
- ✓ **Obtain return flow credits for return of treated effluent**
- ✓ **Both**

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*Long-Term Options***Surface Diversions**

SW1. Diversion at San Ildefonso Pueblo

SW2. Diversion at Caja del Rio

SW3. Diversion at Cochiti

SW4. Diversion at Peña Blanca

SW5. Diversion at Abiquiu

SW6. Expand Use of Buckman Diversion

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*Long-Term Options***Buckman Options**

✓ **SW6. Expand Use of Buckman Diversion**

- **6A.** Buckman Diversion with Leased Water Rights
- **6B.** Buckman Diversion with Purchased Water Rights
- **6C.** Buckman Diversion with Return Flow Credit
- **6D.** Buckman Diversion with Return Flow Credit and Additional Water Rights

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Long-Term Options

Groundwater Diversions

GW 1. New well field at La Bajada

GW 2. New well field at Santa Fe Canyon

GW 3. Treatment of brackish groundwater

GW 4. Purchase and rehabilitate private wells

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Long-Term Options

Reuse Reclaimed Water

RR 1. Replace irrigation water

RR 2. Use for potable demands

RR 3. Enhance surface supplies

RR 4. Injection, storage & recovery

RR 5. Restore Santa Fe River flow

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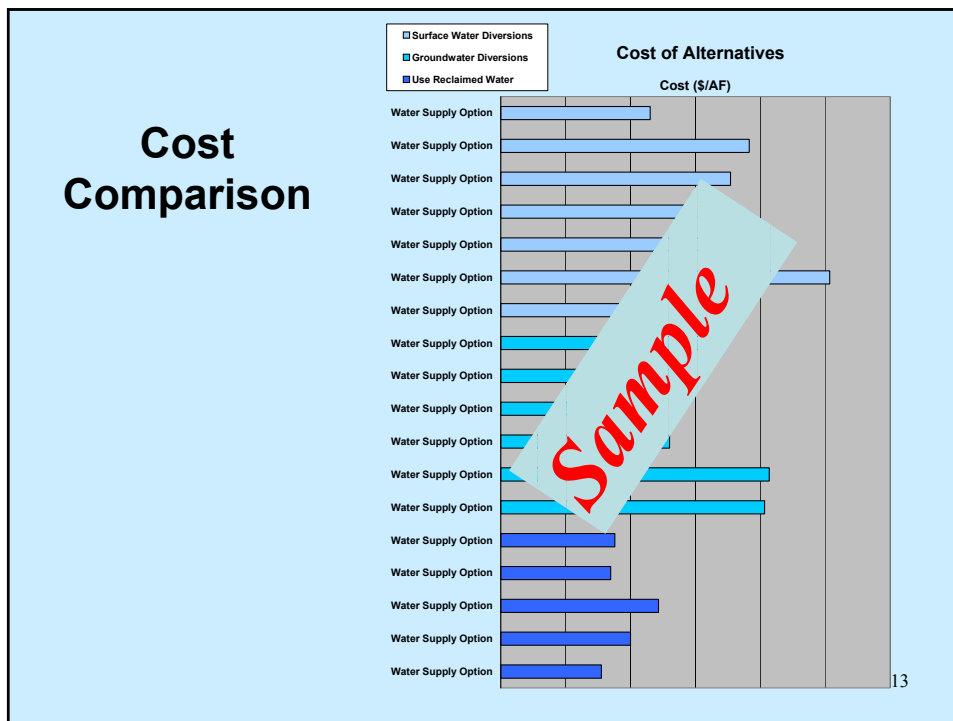
*Long-Term Options***Other Elements of Plan**

- ✓ **Conservation**
 - On-going program
- ✓ **Maintenance and/or replacement of wells**
- ✓ **Management & Conjunctive Use**
 - Conjunctive use of water supplies
 - Pump groundwater to reservoirs (winter)
 - Aquifer storage & recovery
- ✓ **Regional initiatives**
 - Reclaim county wastewater

*City of Santa Fe Water Division**Cost Analysis***Conceptual Level Cost Evaluation**

- ✓ **Use modular cost analysis**
 - Pumping stations costs
 - Pipeline cost per mile
 - Diversions, wells, etc.
- ✓ **Present value cost include capital & operation & maintenance (O&M)**
- ✓ **Estimate yield (AFY) for each alternative**
- ✓ **Compare Cost/AF**

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Screening Process

General Screening Process

- ✓ Agency & public input
- ✓ Numerical scoring system
- ✓ PUC & City Council review, input & approval



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Screening Process**Scoring Factors**

<u>Factor</u>	<u>Suggested Wt.</u>
Cost factor	30%
Sustainability and reliability factor	20%
Technical implementability factor	15%
Environmental concerns factor	15%
Institutional factor	10%
Expediency factor	<u>10%</u>
Total	100%

*City of Santa Fe Water Division***Screening Process****Top-Level Criteria Summary**

- ✓ **Score developed for each factor from lower-level criteria**
- ✓ **Cost Factor**
 - Lowest cost rates “10”
 - Other scaled...twice lowest cost rates “5”
- ✓ **Other Factors**
 - Individual criteria assessed
 - Maximum values for each criteria add to “10”

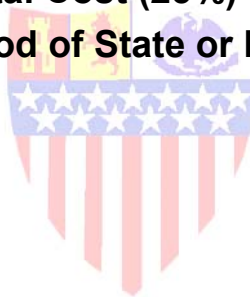
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Screening Process**Sample Weighting Calculation**

Evaluation Factors	Water Supply Option 1	Water Supply Option 2	Water Supply Option 3	Weight
Cost Factor (0 to 10)	5.0	3.2	10.0	30%
Technical Implementability Factor (0 to 10)	10.0	10.0	10.0	15%
Sustainability & Reliability Factor (0 to 10)	5.0	3.0	8.0	20%
Institutional Factor (0 to 10)	6.5	4.3	9.0	20%
Environmental/Cultural Concerns Factor (0 to 10)	8.0	7.0	9.0	20%
Weighted Average Score	6.6	5.1	9.2	

*City of Santa Fe Water Division***Screening Process****Cost Factor**

- ✓ Lowest Unit Cost (\$/AF) (65%)
- ✓ Lowest Capital Cost (25%)
- ✓ High likelihood of State or Federal cost share (10%)

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Screening Process**Sustainability and Reliability Factor**

- ✓ Ability to meet demands during droughts (Max. 3)
- ✓ Ability to meet peak loads (Max. 3)
- ✓ Durability of infrastructure/expected service life (Max. 2)
- ✓ Resistance to natural hazards or vandalism (Max. 2)

*City of Santa Fe Water Division***Screening Process****Technical Implementability Factor**

- ✓ Technical certainty (Max. 4)
- ✓ Minimal impairment of other sources (Max. 2)
- ✓ Compatibility with existing services (Max. 2)
- ✓ Modification of existing infrastructure (Max. 2)

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Screening Process**Environmental/Cultural Factor**

- ✓ Concerns about special status species minimized (Max. 2)
- ✓ Concerns about cultural resources minimized (Max. 2)
- ✓ Effects on special lands minimized/ compatible w. existing uses (Max. 2)
- ✓ Concerns about scenic/visual resources minimized (Max. 2)
- ✓ Concerns about wetlands minimized (Max. 2)

*City of Santa Fe Water Division***Screening Process****Institutional Factor**

- ✓ Potential for public acceptability/unlikely for protest (Max. 3)
- ✓ Within existing rights-of-way/easements (Max. 3)
- ✓ Contributes to quality of life (Max. 2)
- ✓ Fewest jurisdictions involved (Max. 2)

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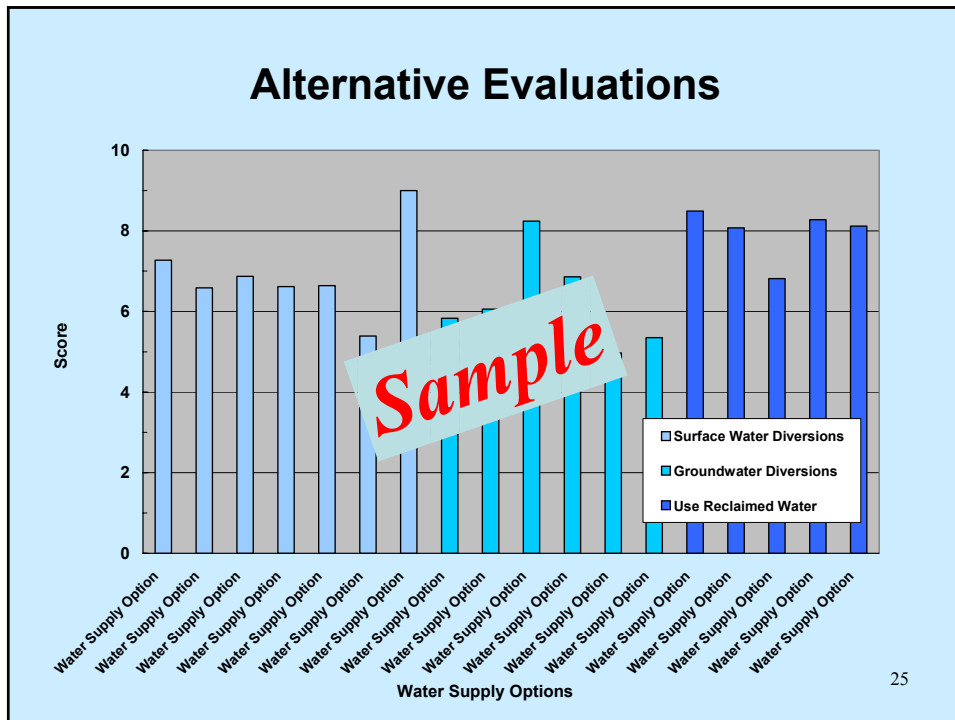
Screening Process**Expediency Factor**

- ✓ Proven technologies, available and easily acquired (Max. 3)
- ✓ Ease of permitting (Max. 3)
- ✓ Land ownership/ease of land acquisition (Max. 2)
- ✓ Modular or phased implementation (Max. 2)

*City of Santa Fe Water Division***Screening Process****Jemez y Sangre & Other Suggestions**

- ✓ Change environmental concerns factor to environmental/cultural concerns
- ✓ Consider giving sustainability and reliability weight equal to cost
- ✓ Include sustainability of water supply, not just sustainability of facilities
- ✓ Consider giving higher wt. to quality of life
- ✓ Consider giving higher wt. to public acceptability
- ✓ May lose value of factors that will be given same score on all alts (i.e. air quality).
- ✓ Consider potential for protest (e.g. lawsuits)

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Next Steps

Next Steps

- ✓ PUC input & approval on criteria & weights
- ✓ City Council?
- ✓ Ongoing effort
 - Refine alternatives
 - Evaluate costs & other factors
 - Preliminary scoring of alternatives
- ✓ Public workshop
- ✓ PUC & Council approval of scoring & shortlist of alternatives
- ✓ Prepare report

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